

REMARKS

Applicants have carefully considered the March 30, 2009 Office Action, and the amendments above together with the comments that follow are presented in a bona fide effort to address all issues raised in that Action and thereby place this case in condition for allowance. Claims 1-8 were pending in this application.

In response to the Office Action dated March 30, 2009, claim 3 has been canceled and claims 1, 5 and 7 have been amended. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, the depicted embodiments and related discussion thereof in the written description of the specification, including cancelled claim 3 and page 9, lines 8-9 of the specification. Applicants submit that the present Amendment does not generate any new matter issue. Entry of the present Amendment is respectfully solicited. It is believed that this response places this case in condition for allowance. Hence, prompt favorable reconsideration of this case is solicited.

Claim 7 was rejected under 35 U.S.C. § 112, second paragraph. Applicants have revised claim 7 to recite that the compact is subject to heat treatment to address the antecedent basis issue identified by the Examiner. Accordingly, one having ordinary skill in the art would not have difficulty understanding the scope of the presently claimed invention, particularly when reasonably interpreted in light of the supporting specification. Therefore, it is respectfully submitted that the imposed rejection of claim 7 under 35 U.S.C. § 112, second paragraph is not legally viable and hence, Applicants solicit withdrawal thereof.

Dependent claims 4 and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Satsu et al. (U.S. Pat. No. 6,054,219, hereinafter “Satsu”). Applicants traverse.

Claims 1-3 and 5-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Satsu in view of Takashi (JP 63-121602, hereinafter “Takashi”). Applicants traverse.

As described at page 2, lines 17-19 of the present specification, an object of the present application is to solve the problems of the prior art and to provide a method of producing a soft magnetic material providing desired magnetic characteristics, soft magnetic powder, and a dust core. Claim 1 has been amended to describe, *inter alia*, the step of preparing a soft magnetic powder and that this step is performed by way of an atomization method. It is submitted that neither Satsu nor Takashi discloses or suggests an atomization step. In the Takashi reference, the powder is obtained by pulverizing the Nd·Fe alloy ingot, not by atomization.

Amended claim 1 further includes an etching step that includes removing surfaces of the soft magnetic particles such that an average particle diameter of the soft magnetic powder prepared by the preparing step is reduced to a value in a range of not less than 90% relative to the average particle diameter. In contrast, Takashi’s objective is to remove the strain and the oxide on the surfaces of the particles. It is submitted that a person of ordinary skill in the art would reliably remove the strain and the oxide by increasing the amount of the surface of the particle removed by etching.

Furthermore, if the atomization method is used for preparing soft magnetic powder, the grain boundary of the surface layer micrograin is to be included mainly in the range of 10% from the outer periphery. In other words, the atomization powder is obtained by forming the molten metal into droplets which are then pulverized by rapid quenching. See page 9, lines 9-11 of the specification.

As described on page 9, beginning at line 8:

Referring to Fig. 2, first, an atomization method is used to produce soft magnetic powder made of plurality of soft magnetic particles 10. More specifically, dissolved source metal

is pulverized by using high-pressure water to spray and rapidly quench the metal, and thus, the plurality of soft magnetic particles 10 are produced. Soft magnetic particle 10 obtained by this rapid quenching step includes, in addition to a grain boundary 51 extending between grains, a surface layer micrograin 57 formed along a surface 10a with a predetermined depth, a surface layer micrograin boundary 53 extending between surface layer micrograins 57, a subgrain 56 formed within soft magnetic particle 10, and a subgrain boundary 52 extending between subgrains 56. It is to be noted that the method of producing the soft magnetic powder is not limited to a water atomization method and may be a gas atomization method.

Accordingly, the atomization powder has an outer peripheral portion which is very rapidly cooled to prevent the growth of the grain, leading to a decrease in grain size. The atomization powder, however, has an inner portion which is slowly cooled to facilitate the growth of the grain, leading to an increase in grain size.

The Examiner's attention is directed to the pictures of the cross section of the atomization powder shown in Figs. 3 and 4 of the present application:

FIG.3

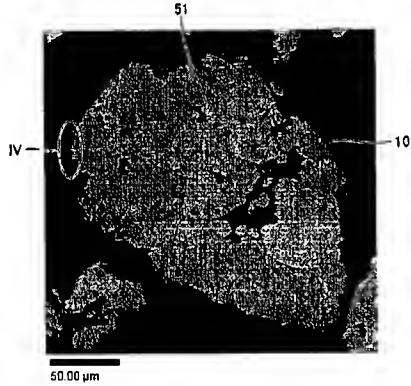


FIG.4



Therefore, in accordance with the subject matter of amended claim 1, by removing the surfaces of the soft magnetic particles, such that the average particle diameter of the soft magnetic powder is reduced to a value in a range of not less than 90%, it becomes possible to prevent the average particle diameter of the soft magnetic powder from being significantly decreased and to efficiently remove the surface layer micrograin from the soft magnetic particles.

For the reasons advocated above, the applied prior art fails to disclose or suggest each and every limitation of the present claimed subject matter. Applicants, therefore, submit that the imposed rejections under 35 U.S.C. §§ 102 and 103 for lack of novelty and obviousness are not factually viable and, hence, solicit withdrawal thereof. Further, if any independent claim is non-obvious under 35 U.S.C. § 103(a), then any claim depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

It is believed that all pending claims are now in condition for allowance. Applicants therefore respectfully request an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment, the Examiner is invited to call Applicants' representative at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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